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10/551,088

09/07/2006

Hans Hellsten

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06/25/2008

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EXAMINER

BRAINARD, TIMOTHY A

ART UNIT

PAPER NUMBER

3662

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                       |  |
|------------------------------|--|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/551,088   | <b>Applicant(s)</b><br>HELLSTEN, HANS |  |
|                              | <b>Examiner</b><br>TIMOTHY A. BRAINARD | <b>Art Unit</b><br>3662               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-17 and 20-21 rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle (US 7006553) in view of Seitz (US 5657244), Linares (US 6760487), and Rawcliffe (US 2002/0144619).

3. McCorkle teaches (claim 15) a radar unit comprising an antenna (fig 4a, item 1), an arbitrary wave generator issuing an arbitrary radar waveform signal at a given pulse repetition frequency, the AWG unit being adapted for adjusting the phase of the radar waveform signal as a function of a phase adjustment signal (col8, lines 36-52), a transmit amplifier coupled to the antenna (fig 4b, item 25), a receive unit coupled to the antenna (fig 4b, item 27), a demodulation and decoding bank comprising known information on the modulation and coding principle of the prevalent RFI signal, the RFI signal typically operating according to a predetermined refresh frequency at which redundant information is repeated (col 12, items 4-17), the arbitrary wave generator is adapted for generating pulse-compressed chirps (col 8, lines 36-52), and whereby the overall radar pulses vary from pulse to pulse such that for the coinciding frequency of the at least one RFI signal, the time between radar pulses is an integer divisor of the periodicity of the at least one RFI signal (col 9, lines 61-67), (claim 16) the overall pulse

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composed of the first and second segment is formed so in relation to a previous radar pulse, that the frequency range is the same as the frequency range of the previous pulse and the duration of the overall pulse is the same as the duration of the previous pulse(col 9, lines 61-67), (claim 17) radar pulses constitute linearly frequency modulated (FM) segments of differing time / frequency rates (col 8, lines 36-52), (claim 20) radar pulses constitute linearly frequency modulated (FM) segments. (claim 21) radar pulses are temporarily disjunct (fig 4e).

4. McCorkle does not teach a 2D filter for generating associate values of radar response and coordinate data, a noise prediction means coupled to the receiver for receiving at least one prevalent radio frequency interference (RFI), said noise prediction means operative to receive, demodulate and decode the information content of the at least one RFI signal, and the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another.

5. Linares teaches a 2D filter for generating associate values of radar response and coordinate data (col 7, lines 3-22). It would have been obvious to modify McCorkle to include a 2D filter for generating associate values of radar response and coordinate data because it is one of multiple design choices with no new or unexpected results.

6. Seitz teaches a noise prediction means coupled to the receiver for receiving at least one prevalent radio frequency interference (RFI) and said noise prediction means operative to receive, demodulate and decode the information content of the at least one RFI signal. It would have been obvious to modify McCorkle to include a noise prediction

means coupled to the receiver for receiving at least one prevalent radio frequency interference (RFI) and said noise prediction means operative to receive, demodulate and decode the information content of the at least one RFI signal because it is one of multiple methods to reduce RFI with no new or unexpected results.

7. Rawcliffe teaches the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another (para 59). It would have been obvious to modify McCorkle to include the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another because it is one of multiple design choices with no new or unexpected results.

8. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle in view of Seitz, Linares, and Rawcliffe as applied to claim 15 above, and further in view of Mitra (US 6867727). Mitra teaches the frequency spectrum is divided into a plurality of sub-channels, each sub-channel corresponding to a regulatory radio channel used for one radio or television information source, the radar unit comprising a noise prediction means for each RFI sub-channel overlapping with the radar range (col 4, lines 27-50). It would have been obvious to modify McCorkle in view of Seitz, Linares, and Rawcliffe to include the frequency spectrum is divided into a plurality of sub-channels, each sub-channel corresponding to a regulatory radio channel used for one radio or television information source, the radar unit comprising a noise prediction means for each RFI sub-channel overlapping with the radar range because it is one of

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multiple design choices with no new or unexpected results. McCorkle teaches (claim 19) the overall pulse is formed so that the composite transmit radar pulses varies from pulse to pulse such that for the coinciding frequency of each RFI signal, the time between radar pulses is an integer divisor of the periodicity of each corresponding RFI signal (col 9, lines 61-67).

9. Claims 22-24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle in view of Rawcliffe. McCorkle teaches 22. (New) A method of adapting pulses transmitted from a radar unit (col 8, lines 36-52) comprising the steps of: receiving and demodulating at least one prevalent RFI signal (col 12, lines 4-17) sensing the periodicity of a component of the at least one prevalent RFI signal having a given RFI frequency coinciding with a frequency of the radar pulses (col 12, lines 4-17) wherein an arbitrary wave generator generates pulse-compressed chirps (col 8, lines 36-52), whereby the overall radar pulses vary from pulse to pulse such that for the coinciding frequency of the at least one RFI signal, the time between radar pulses is an integer divisor of the periodicity of the at least one RFI signal (col 9, lines 61-67), (claim 23) the overall pulse composed of the first and second segment is formed so in relation to a previous radar pulse, that the frequency range is the same as the frequency range of the previous pulse and the duration of the overall pulse is the same as the duration of the previous pulse(col 9, lines 61-67), (claim 24) radar pulses constitute linearly frequency modulated (FM) segments of differing time / frequency rates (col 8, lines 36-52), (claim 26) the overall pulse is formed so that the composite transmit radar pulses varies from pulse to pulse such that for the coinciding frequency of

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each RFI signal, the time between radar pulses is an integer divisor of the periodicity of each corresponding RFI signal (col 9, lines 61-67), (claim 27) radar pulses constitute linearly frequency modulated (FM) segments (col 8, lines 36-52).

10. McCorkle does not teach wherein the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another.

11. Racliffe teaches wherein the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another (para 59). It would have been obvious to modify McCorkle to include the arbitrary wave generator is controlled to produce an overall radar pulse composed of at least a first segment and a second segment whose time / frequency rates may differ from one another because it is one of multiple design choices with no new or unexpected results.

12. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle in view of Rawcliffe as applied to claim 22 above, and further in view of Mitra (US 6867727). Mitra teaches the frequency spectrum is divided into a plurality of sub-channels, each sub-channel corresponding to a regulatory radio channel used for one radio or television information source, the radar unit comprising a noise prediction means for each RFI sub-channel overlapping with the radar range (col 4, lines 27-50). It would have been obvious to modify McCorkle in view of Rawcliffe to include the frequency spectrum is divided into a plurality of sub-channels, each sub-channel corresponding to a regulatory radio channel used for one radio or television information

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source, the radar unit comprising a noise prediction means for each RFI sub-channel overlapping with the radar range because it is one of multiple design choices with no new or unexpected results.

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle in view of Rawcliffe as applied to claim 22 above, and further in view of Limberg (US 5461426). Limberg teaches the periodicity of the RFI signal corresponds to the frame periodicity of a television signal (abs and col 17, lines 50-67). It would have been obvious to modify McCorkle in view of Rawcliffe to include the periodicity of the RFI signal corresponds to the frame periodicity of a television signal because it is one of multiple design choices with no new or unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY A. BRAINARD whose telephone number is (571) 272-2132. The examiner can normally be reached on Monday - Friday 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571) 272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. A. B./  
Examiner, Art Unit 3662

/Thomas H. Tarcza/  
Supervisory Patent Examiner, Art Unit 3662